

IN THE SPECIFICATION

Please amend the following paragraphs as follows:

- 5 (65) My intercropping and mulching method 110 resolves the long-felt need to intercrop economically while preserving the soil for the long term. The following steps comprises [[In]] the best mode of my process 110, ~~the following comprises~~ in most basic format, and without additional artificial pesticides, fertilizers and herbicides:
- 10 (i) no-till planting of green manure plants 44a during the fall within soil 45 of a predetermined area which contains organic debris 19,
 - (ii) harvesting a portion of the green manure plants 44a for mulch 20;
 - (iii) quick tilling a portion of green manure plants 44a and organic debris 19 into the soil 45 of this predetermined area the following spring, and
 - (iii) intercropping of commercial crops, including at least one legume, immediately
 - 15 thereafter within the same predetermined soil, and
 - (iv) spreading a layer of combination mulch 20, also comprising green manure plants 44a and organic debris 19, over the surface of the intercropped seeded soil 45.

Please amend paragraph 68 as follows:

- 20 (68) My preferred method of combined intercropping and mulching 110 provides best results in a midwestern climate. The preferred soils are typical of southwestern lower Michigan and northern Indiana, especially Berrien County in Michigan and LaPorte County in Indiana. Crops are preferably planted in rimer loamy fine sand soils, above a river or drainage way. Soils such as rimer are easily washed away, so my combined
- 25 method [[101]] 110 is particularly useful in these areas. However, method [[101]] 110 is

also beneficial upon other farmland, as well as irrigated fields. Intercropping and green manure growth is optimal when soil 45 is planted the previous growing season with commercial soybeans 16c.

5 Please amend paragraph 93 as follows:

(93) In the best mode of my invention 110, a conventional seed drill 96 is modified to plant an approximately 21-inch wide area 9 of soybean seeds 12, between linearly planted corn seed 10. The modified seed drill 96 preferably leaves alternating intervening unplanted areas 8b which are then seeded with a conventional corn planter 95. Figure 8.

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Please amend paragraph 100 as follows:

(100) Referring now to Figure 10, the preferred modified seed drill 96 is approximately twenty feet in width. The linear distance along opener draw bar 147 from right exterior edge 160a to drill center frame 149 is approximately ten feet, as is the distance between left exterior edge 160b and drill center frame 149. On either side of drill center frame 149 are four sets 151 of three tru-vee openers 150, 152, 153. Each tru-vee opener 150, 152, 153 opens soil 45 with first and second disk blades 154a, 154b. Blades 154a, 154b are angled to each other, thereby forming a “v” with an apex at the point closest to soil 45. As tru-vee openers 150, 152, 153 move forward, blades 154a, 154b turn and cut into soil 45, creating a v-shaped indentation. A seed tube 158 is positioned centrally between both blades to deposit seeds within each v-shaped soil indentation.

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Please amend paragraph 102 as follows:

(102) As seen in ~~Figures 10 and~~ Figure 12, third frame 148 lies above tru-vee openers 150, 152, 153, and comprises opener springs 170. Third frame 148 holds each opener spring 170 in place above each corresponding tru-vee opener 150, 152 or 153, as the case may be. Each opener spring 170 presses downward on its corresponding tru-vee opener 150, 152, 153, thereby providing stabilization over a hard soil surface. Each opener spring 170 presses its corresponding tru-vee opener 150, 152, 153 into soil 45 in the same manner as prior art seed drills.

Please amend paragraph 103 as follows:

(103) Referring to Figures 10 and 12, each opener spring 170 also has an upper U-clamp 180 which attaches each opener spring 170 to third frame 148 with first and second nuts 150c, 150d respectively. When nuts 150c, 150d and bolts 150a, 150b are removed, a person can manually slide each tru-vee opener 150, 152, 153 horizontally along ~~opener~~ opener draw bar 147 and third frame 148. Each tru-vee opener 150, 152, 153 also comprises ~~[[a]]~~ single seed tube 158 which connects each corresponding tru-vee opener 150, 152 or 153 to seed bin 159 in a manner well known in the agricultural industry.

Please amend paragraph 108 as follows:

(108) Referring now to Figures 12 and 15B (posterior view of seed drill 96), in both the prior art and my modified seed drill 96, each row cover unit 140 comprises two wheels 140a, 140b which connect to row cover unit frame 206. Each row cover unit 140 corresponds to a single tru-vee opener 150, 152 or 153 which is anterior to that row cover unit 140 ~~(also in the prior art and my invention 110)~~. Each row cover unit 140 also comprises a corresponding spring 170a which attaches row cover unit 140 to footboard 143.

Please amend paragraph 115 as follows:

(115) Still referring to ~~Figure~~ Figures 14 and 15A, the user mounts fork lift attachment 203 ~~[[on]] upon~~ tru-vee opener set ~~[[151]]~~ 150, 152, 153 which is immediately to the left or right of center support frame 149. In the appended figures, forklift attachment 203 is mounted to right side 160b so that a single tru-vee opener 152 is directly anterior to tractor center 97c. In this manner the farmer can mount seed drill 96 to tractor 97 at one of two positions, as long as front end loader 200 is positioned upon one center set 151 of tru-vee openers 150, 152, 153.

10 Please amend paragraph 119 as follows:

(119) Referring now to Figures 13 and 15A, ~~[[The]]~~ the preferred prior art front end loader 200 comprises first, second, third and fourth hydraulic cylinders 205a, 205b, 205c, 205d (generically 205) operated by an interior tractor oil pump. First and second hydraulic cylinders 205a, 205b respectively are positioned upon front end loader posterior 200b; they raise and lower front end loader 200 with fork lift attachment 203. The remaining third and fourth hydraulic cylinders 205c, 205d respectively pivot prior art retrofit adapter 206 on front end loader anterior 200a by hooks 92.

Please amend paragraph 120 as follows:

20 (120) ~~Still referring~~ Referring to Figure 12, retrofit adapter 206 fits within slots 46a ~~[[on]] upon~~ bars 46b ~~within of~~ prior art fork lift attachment 203; retrofit adapter 206 thereby connects fork lift attachment 203 to front end loader 200 (not seen in this view). Retrofit adapter 206 moves with hydraulic cylinders 205c, 205d whenever fork lift 203 is mounted to retrofit adapter 206, thereby pivoting fork lift attachment 203. This arrangement of retrofit adapter 206 with hydraulic cylinders 205c, 205d and fork lift

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attachment 203 allows the farmer to level seed drill 96 ~~[[when]]~~ whenever modified seed drill 96 is attached to forks 202a, 202b.

Please amend paragraph 123 as follows:

5 (123) Prior to mounting seed drill 96 to fork lift 203, fork 202a must slide alongside center frame 149 on seed drill side 96a. As seen in Figure 15A one set 151 of tru-vee openers 150, 152, 153 respectively fits between forks 202a, 202b. The farmer then attaches forks 202a, 202b to opener draw bar 147 with first and second U-clamps 208a, 208b respectively, as best seen in Figure 12A. Prior art unmodified seed drill 96 only
10 deposits one row of soybean seeds 12 to the left and right of tractor center 97c. However, as seen in Figure 15A, in my invention 110 there are four sets 151 of three tru-vee openers 150, 152, 153 on either side of center support frame 149. Now the farmer can attach modified seed drill 96 to forklift 203, so one tru-vee opener 152 is positioned directly anterior to tractor center 97c.

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Please amend paragraph 127 as follows:

(127) A John Deere 541 Series Loader 200 with attached forklift 203 is the preferred front end loader and forklift of choice. However other front end loaders 200 and forklifts 203 are satisfactory, depending upon compatibility with a farmer's equipment. As seen in
20 Figure 13, front end loader 200 pushes seed drill 96 while corn planter 95 follows behind tractor 97 and linearly deposits corn 10 within corn furrows 90. Referring to Figure 14, in the best mode the farmer attaches corn planter 95 to tractor 97 posterior, using a three point hitch ~~[[230a]]~~ or a one point tug hitch ~~[[230b]]~~ 230, both of which are familiar to the agricultural industry.

Please amend paragraph 128 as follows:

(128) With a conventional front end loader 200 and a coupled conventional forklift 203, a farmer intercroops at least two plants simultaneously, thereby saving time, machine fuel and labor. In other modes modified seed drill 96 is towed by a first tractor 97, while a second tractor pulls ~~[[with]]~~ attached corn planter 95~~[[,]]~~ and ~~which~~ closely follows the first tractor 97 with modified seed drill 96. Whether modified seed drill 96 or corn planter 95 proceeds the other is not crucial, if no significant time passes between corn and soybean seedings.

10 Please amend paragraph 129 as follows:

(129) Referring to ~~Figure~~ Figures 11 and 14, the farmer plants corn seeds 10 linearly within furrows 90 with a ~~prior-art~~ mechanical corn planter 95, which is ~~[[()]]~~ preferably a KINZIE 3100 corn planter~~[[()]]~~(not seen). Each corn planter 95 has row units 162 which open soil to create corresponding corn furrows 90. Each row unit 162 also places corn
15 seed 10 within its corresponding corn furrow 90. As corn planter 95 moves forward, each corresponding row cover unit 162a covers its furrow 90 with soil 45.

Please amend paragraph 130 as follows:

(130) Referring to Figure 14, there are eight row units 162 (not all seen in this view)
20 which horizontally align upon corn planter 95, and with corn planter 95 posteriorly attached to tractor 97. Each row unit 162 mechanically opens each furrow 90 and deposits corn seed 10a. Corn planter row units 162 are adjustable for linear intervals of seed deposit location, as well as seeding to a pre-determined depth. With my method 110, each row unit 162 deposits a corn seed 10a every eight linear inches, ~~while~~ and row
25 cover unit 162a then covers seeds 10 with soil 45.

Please amend paragraph 131 as follows:

(131) After the farmer has intercropped and applied combination mulch 20 (described *infra*) to the first twenty-foot wide area of soil 45, he tills soil 45 and combination green manure 44 for an additional eight corn rows 8 (i.e., another approximate twenty feet lateral width) adjacent to the preceding intercropped twenty-foot wide area. This incremental process continues for each twenty-foot wide pass comprising eight consecutive furrows 90 which are separated by 30-inch corn row 8. In the best mode the operator uses a JOHN DEERE 520 seed drill 96 with a twenty-foot plant path width, and ~~a an unmodified prior art~~ corn planter 95 with an approximate twenty-foot pass width. However, if the operator uses a four row corn planter 95, he only tills that much soil 45 within four corn rows 8 of one pass.

Please amend paragraph 132 as follows:

(132) Other means of intercropping commercial plants are also within the scope of my invention for larger commercial fields. For small gardens, the farmer uses a conventional manual leaf rake 99 to distribute soybean seed 12 randomly within each approximately twenty- inch wide soybean area 9. With either the manual method or mechanized approach, soybean seeds 12 are planted approximately two to three inches deep into soil 45.

Please amend paragraph 133 as follows:

(133) In the best mode mowed green manure plants 44a, corn stalks 5 and other organic debris 19 remaining after the fall harvest are collected similarly to conventional forage: A forage feed harvester harvests and blows mowed green manure plants 44a and debris 19 into forage box wagon 51. Please see ~~Figure~~ Figures 18 and 20. In my invention 110,

initial blending of combination mulch 20 results from mowing and blowing of severed green manure plants 44a and debris 19 into forage wagon 51.

Please amend paragraph 136 as follows:

- 5 (136) The preferred ~~prior art~~ forage box ~~wagons~~ wagon 51 for temporarily storing large amounts of combined chopped mowed wheat grass 18a and organic debris 19 is available from:

H&S Manufacturing Co., Inc.

2608 South Hume Avenue

- 10 P.O. Box 768

Marshfield, Wisconsin 54449

Telephone: 1-715-387-3414

Models: HD7+4 & HD Twin Auger;

HD7+4 HDTwin Auger-front and rear unload; and

- 15 power box-rear unload

Please amend paragraph 137 as follows:

(137) For smaller amounts of wheat grass 18a and organic debris 19, preferred Versa Vac ~~storage~~ forage box wagons (conventionally used for grass clippings and leaf pick-up) are available from:

- 20 Fuerst Brothers, Inc.

P.O. Box 427

Gibson City, Il.

1-800-435-9630,

Models: M180G, M500P, M500G, M900P, M900G

Fuerst Manure Spreaders are also satisfactory and are distributed by:

H.F.S. Tractor

5 1218 South 11th Street

Niles, Michigan

1-616-683-7272

Please amend paragraph 138 as follows:

(138) Unload augers 215a, 215b and discharge opening 137 comprise a cover or lid in the
10 prior art. Attachment of ~~conventional~~ forage box wagons 51 to forage harvesters is
already routine for harvest and storage of forage feed. However, my method 110
introduces a new manner to produce combined mulch 20 from green manure 44 and
organic debris 19 in forage box wagon 51. In this process, the farmer operatively attaches
bale chopper 108 to the side of forage box wagon 51 around first and second unload
15 augers 215a, 215b respectively, *infra*. Figures 17 and 19. My method 110 eliminates
manual labor for filling bale chopper 108 in the prior art. In addition, my remounted pipe
230a and hose 230b spray combination mulch 20 over the intercropped seeded field in a
manner well known in this agricultural industry. Please see Figure 16.

Please amend paragraph 139 as follows:

20 (139) Prior to intercropping the farmer attaches preferred gasoline powered prior art bale
chopper 108 to forage box wagon 51. First and second unload augers 215a, 215b

respectively are located within discharge opening 137 along the anterior lateral exterior surface of forage box wagon 51. Please see Figures 17, 18. On either side of each first and second unload auger 215a, 215b are rear extension panel st17 and anterior extension panel st18 respectively. Power take off (PTO) 165 is a prior art drive shaft at tractor posterior 97e which connects to a second drive shaft on forage box wagon 51. When functionally connected, PTO 165 transfers power from tractor 97 to forage box wagon 51 to operate both unload augers 215a, 215b.

Please amend paragraph 140 as follows:

(140) In my invention 110, organic debris 19 and green manure plants 44a are pulled from prior art forage box wagon 51, through rotating augers 215a, 215b and beaters 36 located above augers 215a, 215b. Figure 18. Using prior art t-rod slats attached to chains (not seen) on the floor of forage box wagon 51, green manure 44 is pulled to the forage wagon anterior. Rotating unload augers 215a, 215b propel organic debris 19 and green manure plants 44a through discharge opening 137 into bale chopper 108, while plastic guard 169 protects the farmer from injury during operation. Figure 17.

Please amend paragraph 141 as follows:

(141) Referring now to Figure [[19]] 17, unload augers 215a, 215b do not physically connect to bale chopper 108 in any manner. Instead, blended organic debris 19 and green manure plants 44a move through discharge opening 137 around augers 215a, 215b and then into bale tube 76, prior to entering bale chopper main frame 130. Bale tube 76 holds organic debris 19 and green manure plants 44a, until main frame knife blades 175a rotate and chop organic debris 19 and plants 44a, thereby creating combination mulch 20.

Please amend paragraph 142 as follows:

(142) As best seen in Figure 17, front and posterior panels st17, st18 respectively form first and second parallel walls of discharge opening 137. To attach bale chopper 108 to discharge opening 147, the farmer slides bale chopper 108 along panel st17, st18 exterior surfaces until interior surfaces of bale tube 76 snugly fit over exterior surfaces of ~~panes~~ panels st17, st18. The farmer next drills two ½ inch diameter circular apertures 240a, 240b (using a conventional power drill and a ½ inch drill bit) through anterior edges 17a, 18a of each corresponding extension panel st17, st18. Each pair of apertures 240a, 240b is located approximately four inches above the bottom of ~~either~~ corresponding extension panel st17, st18. He also drills similar apertures 241a, 241b through both posterior edges 76a, 76b respectively of bale tube 76.

Please amend paragraph 143 as follows:

(143) The farmer then places a first two-inch long by ½ inch thick auger ~~bolts~~ bolt 225a through apertures 240a, 241a and an identical second auger bolt 225b through apertures 240b, 241b respectively. He then tightens auger bolts 225a, 225b in place with ~~by prior art~~ washers and nuts (not seen). In this manner, he attaches bale chopper 108 to each front and rear extension panel st18, rear st17 with first and second auger bolts 225a, 225b (i.e., two auger bolts 225 along each corresponding anterior edge 18a, 17a respectively of each front extension panel st18 and rear extension panel st17 respectively).

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Please amend paragraph 144 as follows:

(144) Still referring to Figures 17, 19 and 20, the farmer attaches one first and one second main frame L-bracket 220a, 220b respectively to first side stack st8 and second side stack st9 respectively. There are at least four self-taping screws 242 for attachment of each L-bracket 220a, 220b to side stack st8 and side stack st9. Each L-bracket 220a, 220b is

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preferably twelve-inches in length by one inch in width, and each self-taping screw 242 is approximately 3/8 inch wide by 1/2 inch-long. ~~L brackets 220a, 220b attach to both bale chopper main frame 130 and the side of forage box wagon 51 with bale chopper 108.~~

- 5 L brackets 220a, 220b attach bale chopper main frame 130 to the side of forage box wagon 51.

Please amend paragraph 146 as follows:

- (146) Referring to Figures 19 and 20, the farmer uses four conventional bunge straps 229
10 to physically attach exhaust hose 230b, by hooking bunge straps 229 to first and second
side stacks st7, st8 respectively, as well as third and ~~[[four]]~~ fourth side stacks st10, st11
along forage box wagon 51. Pipe 230a connects bale chopper 108 to hose 230b in a
manner well know in this art. Preferably hose 203b is trimmed to spray combination
mulch 20 over soil~~[[.]]~~ 45.

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Please amend paragraph 147 as follows:

- (147) In smaller fields or gardens, implements such as the 109 BLUEBIRD™ EasyRake
are recommended to collect and ~~preferably~~ distribute a smaller quantity of combination
mulch 20 over soil 45. The farmer ~~[[then]]~~ manually plants and seeds soil 45 within an
20 area of approximately ten to 20 feet in width. The farmer can then follow seeding with
application of combination mulch 20 in the smaller field or garden.

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